MARSHALL STAR

Marshall Space Flight Center **Feb. 17, 2000**

"We bring people to space — We bring space to people"

Marshall team provides power to Space Shuttle

Space Shuttle Endeavour left Kennedy Space Center, Fla., Feb. 11 on a planned 11-day mission to map the Earth. The Shuttle is expected to return to Kennedy at 3:52 p.m. CST Feb. 22.

The Shuttle Radar Topography Mission, STS-99, employed a 200-foot mast — the largest ever deployed in Space — to bounce beams off the Earth's surface and create a 3-D topographical map. The mission's objective is to demonstrate the technology for obtaining high-resolution digital topographic mapping of the Earth.

The Marshall Center is playing a key

*See **Shuttle** on page 6*

Photo by Terry Leibold, NASA/Marshall Space Flight Center

U.S. Rep. Bud Cramer visits Marshall

U.S. Rep. Bud Cramer of Alabama visited Marshall Feb. 11 to discuss NASA's proposed fiscal 2001 budget, and Marshall's funding outlook. While here, he viewed the televised launch of Space Shuttle Endeavour with Center Deputy Director Carolyn Griner, center, and Linder Metts, right, assistant manager of Marshall's Space Shuttle Projects Office.

X-33 Linear Aerospike Engine completes first demonstration of full-thrust vector control at Stennis

The innovative aerospike engine that will power the X-33 Advanced Technology Demonstrator reached a significant milestone at Stennis Space Center in south Mississippi on Feb. 3 with its longest test to date and the first demonstration of the engine's full thrust vector control.

The Marshall Center manages the X-33 program for NASA.

A NASA/Boeing Rocketdyne team tested the XRS-2200 Linear Aerospike Engine for 125 seconds. This test was the longest test run to date at 100 percent power, exceeding the previous test by 30 seconds.

The successful test also marked the first demonstration of plus or minus 15 percent thrust vector control. The test also demonstrated engine operation at varied power levels and tested different mixture ratios.

Lockheed Martin's X-33 vehicle will use thrust vector control to steer itself in flight. This capability allows vehicle designers to avoid the weight and complexity of engine gimbaling mechanisms, supporting the push for aircraft-like operations.

Initial test data indicates satisfactory engine performance throughout the test.

"The Stennis and Boeing/Rocketdyne test team continues to produce outstanding results in yet another critical milestone in full-power, single-engine testing. This one test ran the engine longer than all previous seven tests combined," said NASA's Dr. Donald Chenevert, X-33 assistant project manager at Stennis.

The XRS-2200 engine was developed and assembled by Boeing Rocketdyne Propulsion & Power in Canoga Park, Calif. The engine will power the X-33, a half-scale, sub-orbital technology demonstrator of Lockheed Martin's proposed, commercial reusable launch vehicle called VentureStar. The X-33 is being developed in partnership with NASA and Lockheed Martin Aeronautics Company — "the Skunk Works" — in Palmdale, Calif.

Once testing of the first of the program's four engines has been successfully completed, two flight engines will be tested. After successful flight acceptance test of the engines, the two flight engines will be shipped to Lockheed Martin Aeronautics Company in Palmdale to be mounted on the X-33 vehicle in preparation for future flight demonstrations.

"Don't Be Too Hasty, Check For Safety"
— Safety slogan submitted by
Terri Dailey, ITI

Black History Month

Lee High School student wins Black History Month essay contest

Merisha Ford, a freshman in Laura Chalk's English class at Lee High School in Huntsville, wrote the winning essay for the Black History Month essay contest for students in grades 9-12,

Her essay, "The African-American Challenges of the 21st Century," will be presented during Black History Month closing ceremonies Feb. 23. Her essay follows:

Merisha Ford

" There have been many obstacles that African-Americans have had to overcome before and after the Emancipation Proclamation was signed that freed us from slavery over 130 years ago. We have come from cotton sacks to Cadillacs, from wagon wheels to Oldsmobiles. We have come from clotheslines to Calvin Klein, and from the out-house to the White House.

One of the challenges that African Americans are facing in the 21st century is "strengthening the family unit." There are too many homes where the father is not present. Too many African American men are in prison. More money is going to build prisons than to assist education. I don't see enough of my young brothers and sisters taking advantage of the opportunities given to us by our ancestors. So many lives were lost for the struggle of getting a good education. We must not waste time "for a mind is a terrible thing to waste." As young people we must see that if we can't read, we can't lead.

There are still many African Americans who don't have and can't afford health insurance which has resulted in the highest death rate among the races. Due to the mortality rate still being too low for newborns it is hard to get health insurance for proper prenatal care and proper nutrition.

We must somehow put an end to our drug problems, teen pregnancies, gang violence, black on black crime, and all other crimes. Racism and hatred from any race must end.

So as we face the 21st century, we must take advantage of the opportunities that have been made available to us. We must come together and work hard to get a good, no, a great education. We must free our minds from past injustices in order to elevate our political and economic standing in America. This is the only way that we can overcome and make the world a better place for generations to come."

Glenn Director Campbell to speak at closing ceremony

Remaining events in Marshall's Black History Month celebration include a science fair for grades 6-8 from 9 a.m.-4 p.m. Thursday in the Bldg. 4203 cafeteria. On Friday and Feb. 22, a Jazz Café will be held from 11:30 a.m.-12:30 p.m. in the Bldg. 4203, cafeteria.

The closing program is scheduled from 9-10 a.m. Feb. 23 in Morris Auditorium. Donald J. Campbell, director of Glenn Research Center in Cleveland, Ohio, will speak. Campbell began his government career in 1960 as a test engineer for gas turbine engines and engine components in the Air Force Aero Propulsion Laboratory at Wright-Patterson Air Force Base in Ohio. He was appointed director of Glenn Research Center in January 1994.

Donald J. Campbell

Center Director's Breakfast

Center Director Art Stephenson briefed Marshall's industry partners on the proposed budget for Marshall for fiscal 2001 and on the status of other programs and projects at a breakfast held Tuesday in Bldg. 4203.

Photo by Doug Stoffer, NASA/Marshall Space Flight Center

Small business program highlighted at forum

Marshall's Small Business Innovation Research (SBIR) program recently played an integral role at the Space Technology and Applications International Forum in Albuquerque, N.M.

Since 1984, the Institute for Space and Nuclear Power Studies has organized this event, with the goal of expanding knowledge to conquer the challenges of space.

With more than 800 attendees from private industry, academia and government agencies, the forum offered conferences on International Space Station utilization, Thermophysics in microgravity, enabling technology and required scientific developments for Interstellar Missions, commercial/civil Next-Generation Space Transportation, and the 17th Symposium of Space Nuclear Power and Propulsion.

Helen Stinson, Marshall's Small Business Innovation Research program manager, and Vita Cevenini, the Code U strategic enterprise representative from NASA Headquarters, co-chaired a technical session on Space Station innovation developed through the small business program.

The two-hour presentation featured Ron Ignatius from Quantum Devices in Barneveld, Wisc.; Dr. Harry Whelan from the Medical College of Wisconsin in Milwaukee; Dr. Daniel Goodwin from Science Research Laboratory in Somerville, Mass.; Mace Jennings from Space Hardware Optimization Technology in Floyd Knobs, Ind.; Cecil Hess from MetroLaser in Irvine, Calif.; and Leonard Arnowitz from BioSpace International in Gaithersburg, Md.

Marshall provided a booth for its small business companies in attendance to showcase their latest research and technology.

Courtesy photo

Marshall exhibitors Helen Stinson, left, Tom Knight, center, and Lynn Garrison participated in the forum.

Severe Weather Awareness Week Feb. 21-25

Marshall employees should know what to do in emergencies

When severe weather is forecast for the Tennessee Valley, the Marshall Emergency Operations Center in Bldg. 4202, room B104, begins to closely monitor weather conditions.

During severe weather, personnel should be alert for announcements over the Emergency Warning System, which is used to announce severe thunderstorm watches/warnings, tornado watches/warnings/sightings, and cancellations of severe weather.

When emergency announcements are made, all personnel are advised to follow instructions and take action as follows:

Severe Thunderstorm Warning

- Remain at work unless otherwise instructed.
- When directed, personnel in trailers and buildings with remote protective areas or conducting outdoor activities should evacuate to protective areas.
- All other personnel should close windows, blinds, drapes and exterior doors, and remain alert for possible evacuation to protective areas.
- If in a protective area, be alert for additional announcements.

Tornado Watch

- Remain at work.
- Close exterior doors, windows, blinds and drapes.
- Be alert for additional announcements.

Tornado Warning

- Remain at work unless otherwise instructed.
- Close exterior doors, windows, blinds and drapes (unless previously performed).
- When directed, personnel in trailers and buildings with remote protective areas or conducting outdoor activities should evacuate to protective areas immediately.
- Be alert for additional announcements.

Tornado Sighting

- Evacuate immediately to a protective area and close exterior doors and hallway doors.
- Remain in protective area and be alert for additional announcements.

Cancellation of Severe Weather

Return to your workstation and resume normal operations.

Emergency Plans are posted near facility entrances and in elevator lobbies of multiple-story buildings. Employees should be familiar with building plans in the building where they work, and familiarize themselves with plans for other buildings upon entering, especially if there is a chance of severe weather occurring that day.

For more information, call Cathy Miller at 544-5187 or Dan Crock at 544-9194.

Public invited to glimpse America's future in space at Marshall's free Open House Saturday, May 20

by Sherrie Super

Preparations are in high gear for the Saturday, May 20, Open House at Marshall. People nationwide are invited to join in the excitement of America's future in space when the Center opens its doors to the public from 9 a.m.-6 p.m.

Admission is free to the event, featuring appearances by NASA astronauts, space exhibits, souvenirs, entertainment, live propulsion test firings and an up-close look at real space flight hardware.

Visitors can stroll through Marshall's Heritage Museum to learn about the Center's 40-year history and incalculable contributions to America's space program. For example, more than 30 years ago the Marshall Center turned an American dream into reality by building the Saturn V, the mammoth rocket that launched the first humans to the Moon.

Today, Marshall continues its tradition of groundbreaking work as NASA's lead center for developing space transportation and propulsion systems, and for a unique type of scientific research — in space and on Earth — called microgravity. Tours of the Center's laboratories will let visitors get a firsthand look and feel for the dimensions of this high-tech, cutting-edge work.

It's been two years since Marshall last opened its doors. More than 25,000 people attended the event in 1998.

"This year's open house promises to be the best ever," said Thom Holden, chairman of the Open House Committee. "An estimated 50,000 visitors are expected to attend." Holden is an employee development specialist in Marshall's Employee and Organizational Development Department.

For more information on the open house, call toll-free (888) 901-NASA (6272) or visit the Open House Web site at:

http://openhouse.msfc.nasa.gov

The writer, a contractor employed by ASRI, supports the Media Relations Department.

Army announces new Information Center hours

Hours of operation for the Redstone Scientific Information Center in Bldg. 4484 will change beginning Feb. 22 to:

- Mondays from 11 a.m. to 6 p.m.
- Tuesdays through Thursdays from 7:30 a.m. to 6 p.m.
- Friday from 7:30 a.m. to 4 p.m.

The center will not be open on weekends or federal holidays.

The Scientific Information Center serves the Aviation and Missile Command, the Marshall Center, Space and Missile Defense Command and contractors, and the area's academic community. In addition to reference information, the center provides a link to electronic information resources worldwide.

Its growing collection includes more than 200,000 books, 6,000 English and foreign language journal titles, 28,000 proceedings, 2 million patents and 2 million technical reports in a variety of formats. General science and technology, space, aerospace, aviation, missiles, rockets and radar topics highlight the collection.

Registered users have access to a variety of online databases through the WebCat interface.

Visit the center's Web site for more information and online registration at:

http://rsic.redstone.army.mil

Using compensatory time rules explained

Compensatory time — time off in lieu of paid overtime — earned by employees who are exempt from the Fair Labor Standards Act (FLSA) is dropped from official records if not used within seven pay periods.

Employees not exempt from the act and who do not use their compensatory time within the seven pay periods are paid for the lost compensatory time at their normal overtime rate.

However, forfeited compensatory time balances of eight hours or more may be extended one time for an additional seven pay periods when it is not possible for the employee to use the compensatory time within the seven pay period time frame.

Employees are responsible for taking compensatory time off and supervisors and team leaders are responsible for scheduling such time. When this is not possible due to work schedules or other requirements, an employee may submit a written request to have the time extended.

Department managers and managers reporting directly to the Center Director are authorized to approve such requests.

For details, see Marshall Procedures and Guidelines (MPG) 3600.1 Attendance and Leave.

Marshall scientist takes 'rocky' road to improve eyesight, farming, weather analysis

by George Hayward

Dr. Doug Rickman's journey to the frontiers of science started because he wanted his big brother's merit badge.

Rickman remembers as a young boy studying a photo of his Eagle Scout brother. "He had his merit badge sash on, and there was a badge there that was absolutely gorgeous," Rickman recalls. It was the merit badge for geology. "I said, 'I like that. I want to do that.'"

Some 35 years later, Rickman holds a doctorate in geology, and his work at Marshall has reached beyond rocks, into satellite imagery, improved eyesight and even the future of farming.

Along the way, the Joplin, Mo., native has studied magnetic resonance images of the human brain, directed software development for weather analysis, used satellites to detect Colorado ore deposits, and examined fish scales and turtle flippers. His work on the medical applications of digital image processing even earned him induction into the U.S. Space Foundation's Space Technology Hall of Fame.

"I ended up doing all these seemingly unrelated things. And it's a long way from 'rockology,'" he said. "But they actually all have a fundamental straightforward relationship. They all deal with images."

Rickman, 48, is one of Marshall's leading researchers in remote sensing — the use of cameras and other technologies to examine objects from great distances. Working at Marshall's Global Hydrology and Climate Center, he uses optical equipment like satellite photography to spur new developments in other science fields.

The self-described "mad scientist" said remote sensing is not as far removed from geology as it may seem. "Geologists have, for decades, been trained to use aerial photography," he said. "One could think of satellite imagery as a particular type of photograph."

Rickman recently returned to his geologist's aerial photography roots, refining the concept of "precision farming." In traditional farming operations, growers spread fertilizer and water uniformly over a field. With precision farming, growers use data collected from air- or space-borne sensors to analyze growth characteristics of areas just a few yards across.

"We can fly over an area and precisely map its plant quality and soil makeup — including mineral variation and organic carbon content — in approximately 6-foot increments," Rickman said. Armed with this data, farmers can improve crop health and yield by applying precise amounts of seed, fertilizer and pesticides as needed.

Rickman's remote sensing work also has led to improvements of a more personal nature — the gift of sight for the legally blind.

Rickman was a lead researcher on LVES, a low-vision enhancement system developed in the early 1990s by NASA and Johns Hopkins University in Baltimore. "Most legally blind people still retain some sight. But they cannot function normally with that limited sight," he said. "In many cases, our system lets them lead a somewhat normal life."

Eyeglasses cannot intensify the brightness of what a person can see, only the clarity. The new system "cures" both. A blind person wears a lightweight headset with mounted video cameras. The cameras feed what they see into circuitry that digitizes and manipulates the image to compensate for the weaknesses of the particular wearer's vision — even brightening the image, if necessary. The improved image is then displayed inside the headset, bringing a clear picture to the person.

Today, the system is used by many people around the world.

The writer, a contractor employed by ASRI, supports the Media Relations Department.

Courtesy photo

Eugene Glenn, left, his son Brian, center, and Doug Rickman study crops as part of an ongoing precision farming campaign conducted by the Marshall Center and the Global Hydrology and Climate Center. The Glenn Farm is a test site for these studies.

Fulfilling a dream

Marshall retiree builds, flies custom airplane

by Debra Valine

One retired Marshall engineer's long-held dream of building and flying his own airplane has turned into a retirement reality.

Bob "B-Square" Butler, 65, retired from Marshall in 1994 after 37 years of federal service. Just months before retirement, he started building his airplane.

It took him 3 1/2 years — working nearly every day — but in August 1997, Butler took the controls of his small aluminum, two-seat airplane and realized his dream.

Butler started flying in 1957 and earned his pilot's license in 1958. At that time he was in the Air Force, working research and development at Eglin Air Force Base in Florida. He took time off from flying to raise a family.

"I now have 1,100 hours and most of them are within the last 10 years," Butler said. "I took lessons on the type of kit airplane that I built before I took it up the first time."

Butler and five friends left Feb. 5 for a planned weeklong air trip to Arizona. "We toured the state from the air," Butler said. "We flew over the Grand Canyon and other things we wanted to see." The group returned Feb. 9, cutting the trip short due to bad weather.

The lightweight airplane is mostly aluminum skins — the same materials used in manufacturing Cessna and Piper aircraft. It has 14,000 rivets — "I drove in all of them myself." He followed plans for building the airplane that came with the kit.

Photo by Debra Valine

Bob Butler stands in front of his custom airplane at Pryor Field in Decatur, Ala.

The airplane is capable of flying at speeds up to 180 mph.

Butler was familiar with the materials he used to build the airplane from his days working at NASA. Butler started at Marshall in 1960 as an engineer in the Manufacturing Engineering Lab. "That was back when we did a lot of in-house manufacturing. We had technicians who had already experienced building the old Redstone missile. We built everything through Skylab."

He also worked on the Saturn 1 booster, Saturn V Booster Stage, the Saturn Instrument Unit and the Apollo Telescope Mount that was a major part of Skylab.

"Once we launched Skylab in May 1973, the in-house manufacturing capability was downsized, so a lot of us had to go elsewhere," Butler said. Butler went to the Solid Rocket Booster chief engineer's office where he was the structures subsystem manager. He retired as chief engineer in the Upper Stages Office.

"I miss my Marshall family; it was really an enjoyable career," Butler said. "I told everybody I would build and fly my own airplane. And I did."

The writer, a contractor employed by ASRI, is the Marshall Star editor.

Shuttle

Continued from page 1

role in the mission.

"We are providing power and coolant to the payload," said Renée Cox, project manager for the Spacelab pallet for Mission STS-99. The Spacelab pallet also serves as an anchor for the Shuttle Radar Topography Mission in the cargo bay.

"The Shuttle is the power source, and we are the fuse box, if you will," Cox said. "We convert the power into something the payload can use."

During the mission, the team is set up in the Huntsville Operations Support Center, monitoring Marshall's system to make sure everything continues to run flawlessly, and that the experiment is getting the resources it requires. If there were problems with the payload or with the pallet, the subsystems team would be working with Johnson Space Center in Houston in troubleshooting, engineering analysis and developing contingency plans for the remaining mission.

"Everything is running great from our perspective," Cox said. "We are performing this service under contract with Boeing. Our support team is primarily contractors."

Fire in Productivity Enhancement Complex quickly extinguished

A small fire erupted in a foam spray booth facility of Bldg. 4707 at the Marshall Center around 11:45 p.m. Monday. No one was in the building at the time.

Clean-up activities concluded Tuesday afternoon. All buildings reopened Wednesday.

An automatic sprinkler system came on and contained the fire, which occurred in the southwest corner of the building. A fire alarm also went off and the Redstone Fire Department responded. They had the fire extinguished by approximately 12:30 a.m. Tuesday.

An initial assessment indicates damage was limited. The building has 35 research cells and the fire affected only one of them. Since there are hazardous chemicals in the area, however, the building was closed to employees until it could be determined there was no environmental hazard.

The 75 employees who work in the building were sent to a nearby cafeteria while waiting word that it was safe to re-enter the workplace.

The building, known as the Productivity Enhancement Complex, houses research and development activities on advanced materials and processes in support of a variety of Marshall programs.

Redstone's Supply Center relocates Feb. 28

On Monday, Feb. 28, at 10:30 a.m., representatives of Alabama Industries for the Blind will open the doors to Redstone's new Base Supply Center in Bldg. 3775, on Maintenance Row, just off Patton Road. Refreshments will be served.

NASA and military IMPAC credit card holders, on- and off-base federal government contractors and federal agencies are eligible to shop at the store.

The Supply Center sells a full line of the mandatory purchase, blind-made office supplies that military and federal civilians buy supporting blind employment with their government IMPAC credit card. Commercial products also are available.

Manager Elbert Campbell says the store will continue to provide customers quality copy paper and paper products, toner cartridges, batteries, pens and binders and much more at the lowest possible price.

For more information, call the Base Supply Center at (256) 876-4011 or Alabama Industries for the Blind at (800)-801-9032.

Around Marshall

Safety and Mission Assurance Office Web Site — Visit Marshall's Safety and Mission Assurance Office's revised and enhanced Web site at: http://msfcsma3.msfc.nasa.gov

Job Hazard Analysis Training — Job Hazard Analysis training will be held Feb. 17, March 7 and March 16 from 8-11 a.m. or 12:30-3:30 p.m. in Bldg. 4203, room 1201. Marshall Work Instruction 8715.15 requires the development of a job hazard analysis for all Marshall jobs and tasks. This course provides the knowledge and skills necessary to perform a job hazard analysis. Civil service personnel should enroll via AdminSTAR. Contractors may attend on a space-available basis. Send e-mail to Linda Myszka.

Job Opportunities

SES Vacancy Announcement: MSFC-ES-01-00, Manager, Propulsion Research Center, Space Transportation Directorate.
CPP-00-37-KP, GS-1720-14, University Affairs Officer, Education Programs Department, Customer and Employee Relations Directorate. Closes March 3.

Recruiting Bulletins
MSFC-TD-00-27, Liquid Propulsion Systems, GS-861-13, AST. Closes Feb. 18.
MSFC-TD-00-28, Navigation, Guidance & Control Systems, GS-861-13, AST. Closes Feb. 18.
MSFC-TD-00-29, Solid Propulsion Systems, GS-861-13, AST. Closes Feb. 22.
MSFC-ED-00-30, Mechanics Of Materials, GS-806-13, AST. Closes Feb. 18.
MSFC-TD-00-32, Flight Systems Design, GS-861-13, AST. Closes Feb. 22.
MSFC-TD-00-34, Liquid Propulsion Systems, GS-861-13, AST. Closes Feb. 18.
MSFC-TD-00-36, Liquid Propulsion Systems, GS-861-13, AST. Closes Feb. 18.
MSFC-TD-00-37, Fluid Mechanics, GS-861-13, AST. Closes Feb. 22.
MSFC-ED-00-39, Structural Dynamics, GS-861-13, AST. Closes Feb. 18.
MSFC-AD-00-40, Personnel Security Specialist, GS-080-12. Closes Feb. 22.
MSFC-ED-00-41, Heat Transfer, GS-861-11, AST. Closes Feb. 22.
MSFC-ED-00-42, Navigation, Guidance & Control Systems, GS-861-11, AST. Closes Feb. 22.
MSFC-ED-00-43, Structural Dynamics, GS-806-14, AST. Closes Feb. 22.
MSFC-ED-00-44, Basic Properties Of Materials, GS-1310-11, AST. Closes Feb. 23.
MSFC-TD-00-45, Aerospace Vehicle Design And Mission Analysis, GS-861-13, AST. Closes Feb. 22.
MSFC-ED-00-46, Basic Properties Of Materials, GS-1310-13, AST. Closes Feb. 24.
MSFC-ED-00-47, Flight Systems Test, GS-861-13, AST. Closes Feb. 24.

Employee Ads

Miscellaneous

★ Chrome roll bar and in-bed tool box for full size pickup truck, make offer. 534-8186
★ Boat, Glastron, tri-hull, 60HP Evinrude outboard, tilt trailer. 883-7436
★ Maytag clothes washer, almond, $100. 881-2069
★ Lacrosse helmet, $5. 230-0068
★ Space Jam blanket, sheets and wall picture, new, $35. 722-9989
★ Baby bed w/mattress, white, $100. 534-8176
★ Lane reclining sofa, Keats-multi fabric, w/ burgundy leather matching recliner, both for $800. 230-2586
★ Beanie babies, 78. 931-4144
★ Solid wood bunk beds w/rail, $400. 461-7154
★ Electric wall heaters, two 4KW, three 2KW, working condition, replaced w/central. 734-8461
★ Serenade Lenox china, eight 5-piece place settings, sugar/creamer, 13" oval platter, $1,765. 931-4144 after 6 p.m.
★ Web TV and wireless keyboard, $75; new queen/ king bed frame, $30. 895-0148
★ Oak Windsor rocker, $50; 12' x20' roll of carpet, good quality, $100. 830-2806
★ Central air conditioner, 3 ton, w/associated gas heater, $200. 828-3896
★ Ladies Raleigh 10-speed bicycle, $25; child's rocking/bouncing horse, $40. 533-5942
★ 1990 Mastercraft TriStar 190 w/trailer, open bow, 351 engine, 185hp, custom cover, barefoot training boom, $13,900. 757-0320
★ Earth tone plaid love seat w/walnut wood trim. $40. 881-6531

Vehicles

★ 1999 Sienna LE van, burgundy pearl, nicely equipped, 19K miles, under warranty, $23,300. 837-6708
★ 1992 Lincoln Town Car, executive series, 61K miles. 586-7375
★ 1997 Eagle Talon esi, sports package, 16" wheels, moon-roof, loaded, 12-CD changer, 43K miles, new tires, $9,395. 852-8320
★ 1991 Chevy G20 conversion van, high mileage, V-6, $2,300. 732-3245/Mark
★ 1992 Mitsubishi Galant GS, 4-door, 5-speed, a/c, power, cruise, 48K miles, $5,250. 536-3390
★ 1995 Ford Taurus GL, 80K miles, all options, $5,150. 776-3040
★ 1998 Mazda 626 LX, loaded, must sell, $13,000 obo. 757-0320
★ 1991 Chevrolet Lumina APV Van, 91K miles, $3,600. 883-9339
★ 1989 Blazer, S-10, 165K miles, 2-door, white, $2,500; 1989 Ford Tempo, 128K miles, manual, $600. 883-8947
★ 1996 Mazda 626 LX, V-6, 59.3K miles, white, spoiler, moon-roof, $10,100 obo. 574-5098 after 5:30 p.m.
★ 1996 Honda Civic, silver, 59K miles, 5-speed, a/c, upgraded Pioneer stereo, $11,000. 882-5363
★ 1995 Saturn SL2, 85K miles, teal green, leather, automatic 4-speed, 35-mpg, a/c, am/fm tape stereo, $7,500. 464-9664

Free

★ Composted horse manure, front-end loader available to load on weekends. 420-6574

Wanted

★ NASA "Chariots for Apollo" or "Stages to Saturn" historical series books. 430-0421
★ Used baby gate in good condition. 828-7377
★ Computer speakers for PC. 883-2757
★ Texas Instruments, Model 89 or 92 calculator, in good condition w/operating manual. 586-8571
★ Motorcycle, dirt bike, 125cc or less, in good condition. 830-2806
★ Slide rules in very good or excellent condition. 650-0500

Lost

★ Brown brief case, lost 2/4/00, possibly lost in Bldg. 4312 or Bldg. 4711. 544-2700
★ Mont Blanc pen, burgundy, lost approximately one month ago. 544-1000 if found

Found

★ Navy blue suit jacket, size 14 petite, in North parking lot, Bldg. 4200. 544-1915
★ UAH portfolio, near Bldg. 4203 in road. 544-7134
★ Medicinal tablets, east side of Bldg. 4202. Call 544-4758 to identify

Carpool

★ From Decatur to Marshall and back, Monday-Friday, except Thursday, non-smoker, flexible hours. 351-6855

Center Announcements

☛ ***MARS 2000 Soccer* —** MARS soccer will start this year in early March. Participation in the club is open to all NASA personnel and contractors. Pickup games are being held Sundays at 1 p.m. at the southwest corner of Martin and Rideout roads. For more information, call Bob Linner at 544-3833.

☛ ***NARFE Meets* —** The National Association of Retired Federal Employees (NARFE)-Decatur/ Morgan County Chapter 736 will meet at 11 a.m., Feb. 23 at Picadilly's in Decatur. All retired federal employees are welcome and encouraged to attend. For more information, call Marty Eddy at 773-4826.

☛ ***February Blood Drive* —** A blood drive will be held from 8:30 a.m.-1:30 p.m. Friday at Bldg. 4752. The schedule is: A-B, 8 a.m.; C-F, 8:30 a.m.; G-H, 9 a.m.; I-L, 9:30 a.m.; M-O, 10 a.m.; P-S, 10:30 a.m.; and T-Z, 11 a.m. If unable to make assigned appointment time, American Red Cross personnel will be available until 1:30 p.m.

☛ ***Shuttle Buddies* —** The Shuttle Buddies will meet for breakfast at 9 a.m. Feb. 28 at Mullins Restaurant on Andrew Jackson Way. For more information, call Deemer Self at 881-7757 or Gail Wynn at 852-8189.

☛ ***Genealogical Society* —** The Huntsville Genealogical Computing Society will meet at 7 p.m. Feb. 21 at the Huntsville/Madison County Public Library at 915 Monroe Street in Huntsville. Bob Mackintosh will present "Researching Your Scottish Ancestors." For more information, call Bob Pace at 881-6670.

☛ ***AIAA Dinner Meeting* —** The American Institute of Aeronautics and Astronautics will hold a dinner meeting at 6:30 p.m. Feb. 24 at the Von Braun Center's Orchestra Room. Cost for members is $12; students, $6; guests, $15; corporate tables for eight, $96. Speaker is Richard E. Martin. For reservations, call Richard Wilson at (256) 544-1977 or e-mail: richard.wilson@msfc.nasa.gov no later than Feb. 18.

☛ ***Fireside Chat* —** The Marshall Retiree's Association will hold the first in a series of four fireside chats at 7 p.m. Thursday at the Exhibit Hall, University Center at the University of Alabama in Huntsville. Huntsville — Before & After the Rocketeers Came (1945-Early 50s) will be presented.

☛ ***MESA Meets* —** The Marshall Engineers and Scientists Association (MESA) will meet at 11:30 a.m. Thursday in Bldg. 4471, room C-105.

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